

Notice of Allowability

Application No.

10/808,575

Applicant(s)

TANI ET AL.

Examiner

William Hernandez

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 6/12/07.
2. ☒ The allowed claim(s) is/are 4-8, 10, 14-18, 20 and 21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>20070305</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Tomoki Tanida on 8/10/07.

Amendment to the Claims

2. Regarding claim 18, amend as follows:

An amplifier circuit comprising:

an amplifier unit which repeats an auto-zero operation and an amplification operation alternately;

a driving unit which supplies the amplifier unit with a bias voltage; and

a control unit which switches the current driving capability of the driving unit according to a variation in an amount of current required between the auto-zero operation and the amplification operation of the amplifier unit,

wherein the driving unit includes a bias circuit configured for outputting a first bias voltage and a second bias voltage which are different from each other, selectively; and

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the control unit switches the output of the driving unit between the first bias voltage and the second bias voltage according to a variation in the amount of current necessary for the load[.].

wherein the bias circuit is a Wilson type current mirror circuit which includes at least a pair of n-channel transistors having different width/length ratios, a pair of p-channel transistors having generally the same width/length ratios, and a switching element which switches the output between the first bias voltage and the second bias voltage.

3. Regarding claim 19, this claim has been cancelled.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach or suggest the limitation/combination of "each of the plurality of bias circuits includes: a CMOS transistor pair composed of a PMOS transistor and an NMOS transistor which are connected in series between a power supply potential and a ground potential and have a common drain connected to their respective gates, the drain outputting the bias voltage; a first switching element which interrupts a feedthrough current occurring from the CMOS transistor pair; and a second switching element which controls output of the bias voltage from the CMOS transistor pair" as called for in independent claims 5, 6, 14 and 15 ; the limitation of "wherein the bias circuit is a Wilson type current mirror circuit which includes at least a pair of n-channel transistors having different width/length ratios, a pair of p-channel transistors

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having generally the same width/length ratios, and a switching element which switches the output between the first bias voltage and the second bias voltage" as called for in independent claims 10 and 18; and the limitation of "the control unit controlling the current driving capability so as to drive at least any one of the plurality of stages of conversion units with a relatively high current and drive the other conversion units with a lower current" as called for in independent claim 20. Therefore, claims 4-8, 10, 14-18, 20 and 21 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Hernandez whose telephone number is (571) 272-8979. The examiner can normally be reached on Mon.-Fri. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Drew Richards can be reached on (571) 272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WH



TUAN T. LAM
PRIMARY EXAMINER